

## EPSRC-funded Postdoctoral Research Fellow



### Role Description

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**GRADE**

Grade 5

**LOCATION**

Merchiston Campus,  
Edinburgh

**LINE MANAGER**

Dr Yanchao Yu

**Role Summary**

The Learning from Collaborative Storytelling (LoCS) project is an EPSRC-funded research programme that brings together interdisciplinary expertise from computer vision, cognitive robotics, and human-robot interaction. The project is led by the School of Computing, Engineering, and the Built Environment at Edinburgh Napier University, with collaboration from academic partners and industry stakeholders.

The ambitious programme aims to create a new framework for visual scene understanding through interactive, collaborative storytelling between humans and robots. By integrating multimodal data, advanced computer vision techniques, and cognitive models, the project seeks to enhance robots' ability to acquire a deeper contextual understanding of dynamic environments and to support real-world applications in education, healthcare, and assistive technology.

The role involves taking a leading part in the LoCS project under the direction of Dr. Yanchao Yu, working on developing and integrating multimodal knowledge extraction techniques and designing novel AI-driven storytelling frameworks.

**Line Management Responsibility for:**

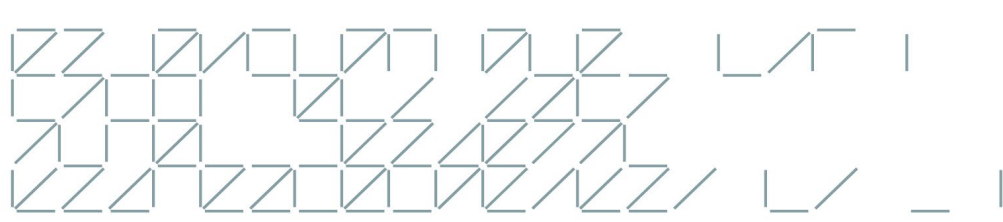
This role does not have any line management responsibilities currently.



## Main Duties and Responsibilities

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- Undertake high-impact research in developing and evaluating real-time machine learning models for visual scene understanding and collaborative storytelling between humans and robots. Priority research areas include knowledge extraction from visual data (e.g., image and video streams), multimodal interaction for contextual reasoning, and real-time narrative generation. Of particular interest are models that integrate cognitive robotics and multimodal data sources to enhance robots' ability to engage in meaningful dialogue.
- Design and implement experimental protocols for data collection and human-robot interaction studies. This includes setting up laboratory and real-world evaluations, coordinating collaborative storytelling activities, and analysing results using both quantitative and qualitative data analysis techniques.
- Contribute to the development and evaluation of cognitive frameworks that integrate commonsense knowledge and real-world sensory input for improved understanding and interaction in diverse environments.
- Prepare high-quality, peer-reviewed publications for leading journals and conferences and disseminate research findings at national and international conferences.
- Plan and manage own research activities in collaboration with other project teams, ensuring alignment with project goals and milestones.
- Participate in external research networks and events to build new relationships, exchange ideas, and disseminate findings, including developing partnerships with academic researchers, industry collaborators, and community stakeholders.
- Regularly liaise with project partners, including collaborating companies and end-user groups, to ensure project objectives are met and research findings are translated into practical applications.
- Develop and contribute to proposals to secure future research and innovation funding, identifying new opportunities and supporting strategic research initiatives.
- Undertake other activities as appropriate to the LoCS project, under the direction of the Principal Investigator.
- Assist in the development of student research skills at undergraduate or postgraduate level
- Role model the University's values & behaviours
- Be responsible for ensuring that the information and records processed (received, created, used, stored, destroyed) on behalf of the University are managed in compliance with all applicable legislation, codes and policies e.g. [Data Protection](#), [Information Security](#) and [Records Management](#).



## PERSON SPECIFICATION

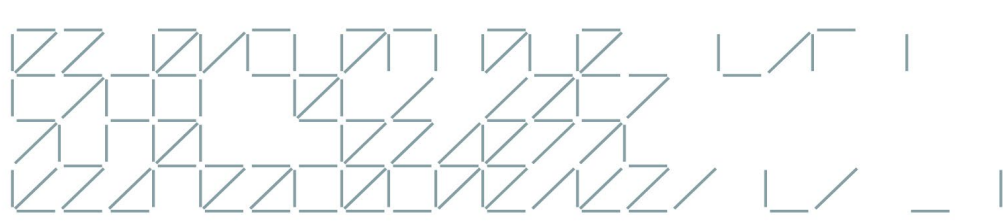
ESSENTIAL      DESIRABLE

### Education / Qualifications

- Awarded a PhD degree in a closely relevant field (e.g., Computer Vision, Robotics, Conversational AI, Multimodal Interaction). ✓

### Skills / Experience

- **Excellent programming skills** in Python and/or C++, with expertise in deep learning frameworks (e.g., PyTorch, TensorFlow). ✓
- **A strong background in** computer vision, cognitive robotics, machine learning, multimodal interaction, or a related area. ✓
- **Research experience in** visual scene understanding, human-robot interaction, natural language processing/generation, or multimodal storytelling systems. ✓
- **A strong publication record** in top-tier international journals and conferences (e.g., CVPR, ICRA, HRI). ✓
- **Experience in developing and evaluating real-time algorithms** for complex visual data analysis and interactive multimodal systems. ✓
- **Proven ability to solve real-world research problems independently**, formulate interdisciplinary hypotheses, and test them using scientific methods. ✓
- **Strong quantitative research skills** and ability to apply advanced techniques to interpret and analyse complex multimodal data. ✓
- **Experience presenting research findings** at international conferences and workshops. ✓
- **A track record of contributing effectively to collaborative research teams** and building interdisciplinary collaborations. ✓
- **Excellent communication skills** to disseminate research findings to specialised and general audiences, both orally and in writing. ✓
- **Excellent interpersonal skills**, with the ability to engage and communicate effectively with academic colleagues, students, and external collaborators. ✓



<ul style="list-style-type: none"><li>• <b>Proven organisational skills</b>, with the ability to prioritise and manage multiple tasks to meet tight deadlines.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>A commitment to continuous professional development</b> and staying up-to-date with advancements in the relevant fields.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Experience with advanced visual knowledge representation</b> techniques such as knowledge graphs, commonsense reasoning, and visual story generation frameworks.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Knowledge of challenges in technology integration</b> (e.g., combining computer vision with NLP, commonsense reasoning, robotics, and sensor integration).</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Experience in real-time system design and prototype development</b> for multimodal human-robot interaction.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Experience in preparing research proposals</b> and securing external funding.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Proven ability to generate and implement new ideas</b> that advance the state of the art in human-robot interaction and multimodal systems.</li></ul>	✓
<ul style="list-style-type: none"><li>• <b>Knowledge of the assistive technology, education, or healthcare industry landscapes</b> and understanding of the commercialisation potential of research innovations.</li></ul>	✓